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Official Organ of the San Diego Society of Natural History.

C. R. ORCUTT, EDITOR.

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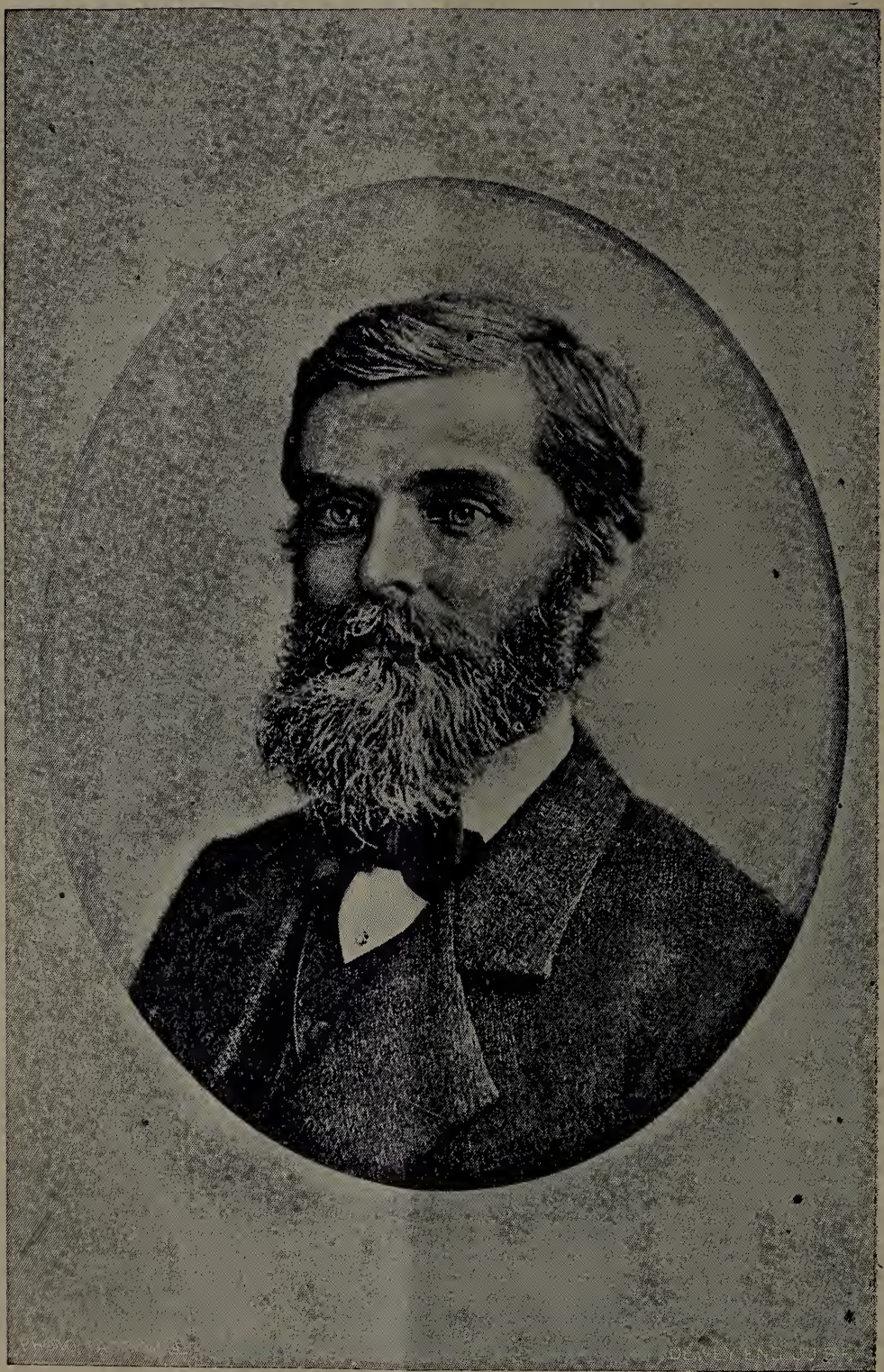

CHARLES CHRISTOPHER PARRY.

VOL. VII. JUNE, 1890. No. 50.

CHARLES CHRISTOPHER PARRY.

In the spring of 1880, two life long friends visited San Diego, California together, and attended a meeting of the San Diego Society of Natural History, which had been called in honor of their visit. These men were Dr. C. C. Parry, of Davenport, Iowa, and Dr. George Engelmann of St Louis, two men of the highest individuality of character whose names are inseparably connected with the history of West American botanical research. It was my fortune to have the honor of guiding the venerable Dr. Engelmann from our rooms to his hotel at the close of the meeting, and the few words of instruction received in the privacy of his room will always be remembered with pleasure. This personal meeting was followed by valued correspondence, which ended only with the life of that eminent botanist, who has left a lasting memorial in his botanical works.

Two years later, Dr. C. C. Parry again visited San Diego, when he rediscovered the little fern, Ophioglossum nudicaule, which he had first found in 1850, and which ever since had been unseen. Finding the well-known botanical explorer, Charles G. Pringle, of Charlotte, Vermont, an expedition into the then unexplored territory of Lower California was proposed, and Dr. Parry kindly invited me to join the party. On this trip, that magnificent wild pea known to the mountaineers as the 'Pride of California' (Kellogg's Lathyrus splendens) was rediscovered, festooning the shrubs along several of the canyon roads, with its brilliant masses of rose red or crimson blossoms.

In the neighborhood of Todos Santos or 'All Saints' bay, were discovered the new Ribes viburnifolium, Parry's Mexican rose (Rosa minutifolia, Engelm.) and a dwarf horse chestnut (Æsculus Parryi) among other new plants.

It is largely to the personal instructions in the field received at this time from Dr. Parry and Mr. Pringle that the writer owes

whatever skill he has as a bontanical collector. Strange it would have been if the example set by these enthusiastic scholars should not have kindled a feeling of emulation in their young associate. The friendship formed during these few weeks in camp and field was lasting and the first was the beginning of a series of explorations together. In January, 1883, Dr. Parry, with his wife, Miss Rosa Smith (now Mrs. Eigenmann), W. G. Wright, of San Bernardino, my father, H. C. Orcutt, and myself formed a party for further exploration of the shores of 'All Saints' bay. On this trip the new spice bush (Ptelea aptera, Parry) was discovered. The main object of our party was the introduction of the Rosa minutifolia into cultivation, but in spite of the greatest precautions and care taken with a thousand roots which were transplanted to a garden in San Diego, the experiment proved almost a total failure.

Dr. Parry discovered during his extensive explorations hundreds of new plants afterward described by Dr. Gray and by Dr. Engelmann, and his name is firmly fixed in the history of West American botany. While his greatest service has been rendered to botanical science, yet, horticulturists will not soon forget that it was Dr. Parry who discovered Picea pungens, the beautiful blue spruce of our gardens; Pinus Engelmanni, Pinus Torreyana, Pinus Parryana, Pinus aristata, and a host of others of beauty and value.

Through his zeal and enterprise, many plants now familiar to American and European gardens were first cultivated. Zizyphus Parryi, Phacelia Parryi, Frasera Parryi, Lilium Parryi, Saxifraga Parryi, Dalea Parryi, Primula Parryi, and many other plants of great beauty or utility bear his name in commemoration of his labors and worthily do him honor.

No name is more intimately connected with the flora of West America than is the name of Charles Christopher Parry. For fifty years his indefatigable labors and explorations in the West have enriched our botanical lore. His name is associated with many pleasant memories in the mind of every one who was so fortunate as to know him personally. Since 1882 he has published very important papers on the species of Chorizanthe found on the Pacific Slope; on the genus Arctostaphylos (the manzanita); on Pacific Coast Alders; and later, on the genus Ceanothus, which contains the numerous mountain and coast shrubs known as 'wild lilacs.' These papers were the result of special studies in the field of these difficult groups of plants and contained descriptions of many new species.

Not only the botanical world, but every one with whom this genial, unostentatious botanist has come in contact with, were pained to learn of his death, which occured at his home in Davenport, Iowa, on the 20th day of February, 1890, from pneumonia, which followed an attack of influenza, contracted while on a visit to the Atlantic States. The following review of his life is complied from several biographical sketches which have appeared.

We are indebted to Messrs. Dewey & Co., publishers of the *Pacific Rural Press*, for the accompanying portrait.

Dr. C.C. Parry was born at Admington, Worcestershire, England, August 28, 1823. When a lad of nine years he came to America with his father's family. His parents settled on a farm in Washington county, N. Y. and there he passed his boyhood. He improved well the advantages afforded by the schools at that place, and in earliest manhood he entered Union College, Schenectady, N. Y., graduating in due time with full honors. In the meantime he had taken up the study of medicine, prosecuting it in connection with his other studies, until he was qualified to practice.

He had found at an early period that he possessed a longing for the study of the sciences, especially a love for botany, and he devoted himself at spare moments to the study of the vegetable world about him. As he advanced in the study of this charming science he grew to love it more, until its pursuit become an absorbing passion above all other aims in life.

In the fall of 1846 the young doctor and scientist moved to Iowa with his father's family, where he engaged in the practice of medicine at Davenport for six or eight months.

In May 1853, Dr. Parry was married to Miss Sarah M. Dalzell, who died five years later, leaving a daughter who has since died. Dr. Parry was subsequently married to a lady of Wisconsin, and she survives him.

Dr. Parry's professional career was of short duration, the attractions of forest and field proving more inviting to him that the routine of a physician's life. He soon retired from the active practice of medicine and devoted himself to what was to prove his life work, the study of the western flora.

In 1842 he accomplished his first botanical work in the region of north eastern New York, while engaged in the study of medcine. In the five years thus occupied he spent one season in central New York, and visited the Niagara Falls. During the last two years of this period he made the acquaintance of Dr. John Torrey, the renowned American botanist, whose aid and encouragement to young botanists gave such an impetus to the study in the early history of this science in the new world. To the instruction and friendship of this good and truly great man, Dr. Parry was always proud to ascribe much of his own success in the same line of research; and he in turn freely aided his younger cotemporaries, many of whom owe much to his personai instructions and assistance.

During 1847, the year following his arrival in Davenport, Iowa, Dr. Parry was active in the study of the local flora, and during the summer made an expedition to the central part of the State, near Des Moines, with a government land surveying party under the command of Lieut. J. Morehead. In the succeeding year he was connected with Dr. David Dale Owen's geological

survey of the northwest, collecting along the course of the St. Peters river and up the St. Croix as far as Lake Superior.

In 1849 he was appointed botanist of the Mexican boundary survey, going by the way of Panama to San Diego, California, where he arrived in July. In September of the same year he accompanied an astronomical party to the junction of the Gila and Colorado rivers, returning to San Diego in December. The following season of 1850 he formed extensive collections along the southern boundary, extending his botanical explorations as far north as Monterey, along the coast. The years 1851-2 was spent by him on the boundary survey, in Texas, where he made valuable collections in localities never before or since visited by any botanist. He returned to Washington, D. C., in the winter of 1852-3 and prepared his report, since published in the volumes of the Mexican boundary survey.

In the spring of 1861 the culmination of the Pike's Peak fever again opened the way for western exploration, and in a private trip to the Rocky Mountains, he secured a rare collection of alpine plants, among them some of the early discoveries of Dr. James when on Long's expeditions in 1820, together with many new to science. The following season he was associated with E. Hall and J. P. Harbour in further exploration of the Rocky Mountain regions, the botanical results of which were published in the proceedings of the Academy of sciences of Philadelphia, for 1863.

In 1864, in company with Dr. J. W. Velie, then of Rock Island, Ill., he continued these explorations, in the vicinity of Long's Peak and Middle Park.

In 1867 he accompanied a surveying party in the interests of the Pacific Railway Co., across the continent on the line of the 35th parallel, north latitude. Valuable collections were secured on this trip in western Kansas, Colorado, New Mexico, Arizona and California. A list of the plants comprised in this collection was subsequently published in Dr. W. A. Bell's work entitled 'New Tracts in North America.'

An interval of several years subsequent to the latter trip was occupied in filling the position of botanist of the U. S. Department of Agriculture, at Washington, D. C., to which he was appointed in 1869. The principal work there devolving upon him was that of arranging the extensive collections of plants which had accumulated at the Smithsonian Institution as a result of various government explorations.

In 1872 Dr Parry revisited the alpine regions in the Rocky Mountains in company with the late J. Duncan Putnam. The following year he was attached to the northwestern Wyoming expedition under Capt. W. A. Jones, his explorations extending through the Wind river region to the Yellowstone National Park, Mr. Putnam accompanying him as his entomological assistant.

In 1874 he made a tour to southern Utah, securing a valuable series of the plants of the singular desert district in the valley of

the Virgen, near St. George. In 1875, again accompanied by Mr. Putnam. Dr. Parry spent the summer in central Utah, in the vicinity of Mt. Nebo; and continued his trip in the fall to southern California.

The season of 1876 was spent in the high mountains and in the desert regions in the vicinity of San Bernardino, California, in company with J. G. Lemmon.

He made extensive collections in 1878 through the region from San Luis Potosi, Mexico, to western Texas, by way of Saltillo and Monterey.

The following biographical sketches have appeared:

Garden and Forest, III., 120. Editorial.

Botanical Gazette, XV., 66. Editorial.

Bulletin Torrey Botonical Club, by M. L. Britton.

Pacific Rural Press, XXXIX, 385. With protrait. By Prof. J. G. Lemmon and editorial.

Democrat Gazette, Davenport, Iowa, February 20, 1890.

The writer desires to compile a list of the published papers by Dr. Parry, and would ask the assistance of other botanists toward rendering it complete. Probable his last contribution to his favorite science appears in this issue, where he names a new and beautiful astragalus from the Colorado Desert. *C. R. Orcutt.*

CHARLES HARVEY BOLLMAN.

Charles Harvey Bollman died at Waycross, Georgia, July 18, 1889, whither he had gone to make explorations in the swamps and rivers for the United States Fish Commission. He was a young man of fine ability who had just graduated from the Indiana State University and had very bright prospects before him.

His first work was in connection with the American Ornithologists' Union, as an observer of bird migrations. He successfully studied the vertebrate and invertebrate fauna of his neighborhood, and became especially interested in the Myriapoda, soon making for himself an international reputation.

He was an enthusiastic and steady worker. His published papers all treat of the Myriapoda and fishes, the latter chiefly written with Dr. D. S. Jordan.

The following are his published papers:

1. Notes on a collection of fishes from the Monongahela river.
2. Preliminary descriptions of ten new North American Myriapods. American Naturalist, January, 1887.
3. Descriptions of new genera and species of Myriapods. Entomologica Americana, March, 1887.
4. Notes on North American Lithobiidæ and Scutigeridæ, with descriptions of new species. Proc. U. S. National Museum.
5. Notes on North American Julidæ, with descriptions of new species. Annals of the N. Y. Acad. of Sci. IV–25–44, 1887.
6. Notes on a collection of fishes from the Escambia river,

with descriptions of new species of Zygonectes. Proc. U. S. National Museum, 1886, 462–465.

7. A list of fishes observed in the vicinity of Brookville, Franklin county, Indiana. Bull. Brookville, Soc. Nat'l Hist. 1886, 1-11.

8. Fishes collected at Green Turtle bay, in the Bahamas, by C. L. Edwards. Proc. U. S. National Museum, 1888.

9. New species (thirty-one) of fishes from the Galapagos Islands and coast of the U. S. Columbia, l. c. 1889.

10. Notes on a collection of Myriapoda from East Tennessee, etc. Annals N. Y. Acad. Sci. 1888, 107–142.

11. New genus and species of Polydesmidæ. Entomologica Americana, Vol. III. No. 3.

12. Notes on a collection of Myriapods from the Bermuda Islands. Proc. Acad. Nat'l Sci. Phila. 1889, 127–129.

13. Description of fourteen new species of North American Myriapods. Proc. U. S. National Museum, 1887.

A number of papers are still in press or in MS. as follows:

14. A preliminary list of the Myriapoda of Arkansas.

15. Notes upon some Myriapoda belonging to the U. S. National Museum.

16. Description of a new species of Fontaria from East Tennessee.

17. Notes upon the Myriapods of Indiana.

18. Notes upon the Myriapods of Minnesota.

19. Classification of the Myriapoda.

20. Classification of the Chilopoda.

21. Notes on a collection of Myriapods, from Cazenovia, New York.

22. Notes upon the Myriapods described by Thomas Say.

23. Notes upon the North American Myriapods described by C. L. Koch.

24 Synopsis of the Scolopendridæ of North America.

25. Synopsis of the Lithobiidæ of North America.

C. H. Eigenmann.

ELAM MARSH GOODWIN.

The years go by, the years go by.
We cannot bid them stay.
Our dear ones from the scenes of life.
Pass rapidly away.

It is the common lot we know,
God's way must be the best,
And in due season He giveth,
To His beloved, rest.

E. E.

The editor loses another personal friend in the death of the Hon. E. M. Goodwin, in Hartland, Vermont, which occurred on

the 12th of April. Mr. Goodwin has for many years occupied a prominent position among the agricultural and educational workers in the State, and his leisure hours were devoted to his favorite studies in natural science. He leaves behind one of the finest collections of minerals, shells, insects, archæological and historical relics in the State. He served several terms in the State legislature. 'Indian Corn and Its Cultivation.' 'The Farmer's Social Position,' and other essays are the product of his pen. His age was sixty-one years. *C. R. Orcutt.*

CONTRIBUTIONS TOWARDS A LIST OF THE FAUNA AND FLORA OF WET MOUNTAIN VALLEY, COLORADO. IV.

(Compiled for the Colorado Biological Association.)

VI.—Mammalia.

The Mammalia have by no means received the share of attention they deserve, the Rodents, especially, being worthy of careful study. Species of Cheiroptera are known to occur, but have never yet been identified For identification of Mammalia we are indebted to Dr. C. H. Merriam.

1. Felis concolor, Linn. Doubtless occurs, but is rare. The earliest record we have is by R. Irwin, 1881.
2. Canis lupus occidentalis, Dekay. Reported by Mr. J. C. Lees, near Brush Creek.
3. Canis latrans, Say. Quite common; Swift Creek, etc.
4. Mephitis mephitica, (Shaw) Baird. Not rare, Willow Creek, etc.
5. Taxidea americana, (Bodd) Baird. Rather common.
6. Ursus arctos horribilis (Ord.) Coues & Yarrow. Some are killed every year. Willow Creek, etc. Near Ilse, 1889. (C. R. Webster.)
7. Ursus Americanus, Pall. Reported from Swift Creek Gulch. We have never seen a specimen taken in the valley.
8. Bos Americanus, Gmel. Extinct. Occasional weathered skulls attest its former presence.
9. Antilocapra Americana, Ord. Reported from Custer Co. by Mr. R. Cusack.
10. Cariocus macrotis (Say) Gray. Sangre de Cristo Range, frequent.
11. Neotoma cinerea (Ord.) Baird. Too common on the Sangre de Cristo Range, where it is very troublesome in houses, making much noise at night, and stealing spoons, bottles, and other attractive objects, which it carries to its nest. It makes a constant tapping noise with its tail.
12. Hesperomys Americanus sonoriensis (Lec.) Coues & Yarrow. Common but losing ground rapidly before the imported house mouse.

13. Mus musculus, L. Common in houses, West Cliff, Swift Creek, Willow Creek, etc.

14. Thomomys talpoides, subsp. Swift Creek.

15. Sciurus hudsonius fremonti (Towns.) Allen. A squirrel, presumably this, is very common on the Sangre de Cristo Range They have been observed to place pine cones in running water, as if to make them soft for eating. (Mrs. M. E. Cusack.)

16. Tamias quadrivittatus (Say) Rich. A chipmonk, doubtless this species, is abundant on the Sangre de Cristo Range. They are, however, not equally common each year in some localities, which gives the idea that they may be partially migratory in their habits.

17. Tamias lateralis (Say) Allen. With the last, but less abundant.

18. Spermophilus tridecemlineatus (Mitch.) Aud. & Bach. A small, striped gopher, no doubt this species, is found at West Cliff and on Swift Creek.

19. Cynomys columbianus (Ord.) Allen. Prairie dogs are every where abundant in open ground, and although no specimens have been critically examined, it is supposed that they belong to this species. A white variety has been reported from near Silver Cliff (E. Bassick), but we never saw an example.

20. Castor canadensis, Kuhl. Grape Creek.

21. Lepus campestris, Bach. Abundant. Short Creek, etc.

22. Lepus sylvaticus nuttallii (Bach.) Allen. Abundant. West Cliff, etc.

23. Putorius longicauda, Baird. An ermine observed on Swift Creek, is probably referable to this species.

T. D. A. Cockerell.

A NEW LOCALITY FOR HELIX AYRESIANA.

This island species heretofore noted from San Miguel, Santa Rosa and Santa Cruz Islands, where it is the only helicoid shell indigenous thereto, I found in October, 1889, very sparingly, after diligent search, upon the middle Anacapa, which is without doubt the southerly and easterly limit of this insular species. The few specimens I obtained are of a decidedly darker color than any I have seen from the other islands, and as they are in danger of almost immediate extermination in their native habitat, from the destruction of the cacti upon which they live. I have planted colonies upon the main land, in hopes of preserving them and have also sent living specimens to some of the islands of the South Pacific for colonization. *Lorenzo G. Yates.*

PALMERELLA.

Prof. E. L. Greene, in Pittonia, I, 297, makes the following statement:

'LOBELIA ROTHROCKII. Palmerella debilis var. serrata, Gray,

Wheeler's Report, 367. I recognize this as quite specifically distinct from the type of Palmerella, which latter should be dedicated to its real discoverer, George W. Dunn, under the name LOBELIA DUNNII.—Palmerella debilis, Gray, Proc. Am. Acad. XI, 81; Bot. Calif. I, 619.'

I suppose since Prof. Greene fails to mention it, that he did not know that a well know botanist, Baillon, had all ready reduced Palmerella to Lobelia, and had made some observations on their properties and likeness to the cichoriaceæ, which sound remarkably like those of 'Analogies and affinities' (Pittonia, I, 294–298). However this may be. I think Prof. Greene should in common fairness prove his statement after having said that the honor of discovering this species does not belong to me.

During my recent illness Mr. Dunn called upon me, and on questioning him about the matter he told me that he had collected it before I had done so, and that he had given a specimen to the California Academy of Sciences. I have asked permission to examine the specimens in its herbarium, and find that the oldest was collected by Dr. C. C. Parry, in 1876, at Santa Barbara, and is the variety serrata; and, that the one from Mr. Dunn has for a label a strip of a margin of a newspaper, with the words 'Big Canyon, L. C. Sept. 13, 1878.' No name but in Mr. Dunn's hand writing.

I have only once visited the spot where the plant was found, and on that occasion Mr. Dunn was a member of the party; but if he secured a specimen the fact was entirely unknown to me. I obtained them with considerable trouble and brought them out of the depths of the canyon in my hat which I tied on to keep them safely. Dr. Gray, considering it to belong to a new genus, honored me by naming it Palmerella, under which name it was published in Proc. Amer. Acad. Oct. 12, 1875.

If it can be proven that any one collected it earlier, in the interest of truth I will be glad to have the fact made known.

Edward Palmer.

A HANDSOME ASTRAGALUS.

[In April, 1889, the editor visited the western borders of the Colorado Desert, in San Diego county, where a large variety of plants were found in bloom. Among others a handsome astragalus was found on the eastern slope of the mountains with very showy scarlet flowers. This was submitted to the late Dr. C. C. Parry, who at first was inclined to consider it a new species. Probably this was the last flower which received a name at the hands of Dr. Parry. The last letter which I received from him enclosed the following:]

The beautiful red (?) flowered astragalus sent by C. R. Orcutt from the western borders of the Colorado Desert, hardly seems

specifically distinct from A. purshii, Dougl. If the flowers are actually red as the dried specimen indicates, it might be designated as: Astragalus purshii, Dougl., var. (?)coccineus.

C. C. Parry.

GEOLOGY, MINERALOGY AND PALÆONTOLOGY

SONOROUS SAND.—From the advance proofs of a paper in press, we learn that Drs. H. C. Bolton and A. A. Julien have arrived at the conclusion that 'the true cause of sonorousness in the sands of singing beaches and of deserts to be connected with thin pellicles or films of air, or of gases thence derived, deposited and condensed upon the surface of the sand grains during gradual evaporation after wetting by the seas, lakes or by rains.' Further, Dr. Bolton says (Researches on sonorous sand in the peninsula of Sinai):

'By virtue of these films the sand grains become separated by elastic cushions of condensed gases, capable of considerable vibration, and whose thickness we have approximately determined. The extent of the vibration and the volume and pitch of the sound thereby produced, after any quick disturbance of the sand we also find to be largely dependent upon the forms, structures and surfaces of the sand grains, and especially upon their purity or freedom from fine silt or dust.

'Though the environment of the sand on beaches and in the desert differs greatly as respects moisture, we believe that the above theory is applicable to both. Statistics of rainfall in the desert are wanting, but the experiences of travelers and my owe observations show that rain falls, in the winter months, abunn dantly in many parts of the peninsula.'

We suggest to our readers on the Pacific Coast (at the desire of Dr. Bolton) that those who have observed the occurrence of sonorous sand on the seashore or in the interior, report the facts in our pages. Kindly give exact locality, date of observation, and any details as to loudness, etc., thought desirable and due credit will be given by Drs. Bolton and Julien in the volume they are preparing for the press on musical sand.

BOTANY AND AGRICULTURAL SCIENCE.

PLANTS FROM BAJA CALIFORNIA.—This paper (reprinted from Proc. Cal. Acad. Sci., Ser. 2, Vol. II., pp. 118-232) by T. S. Brandegee, with supplementary papers by Drs. Geo. Vasey, L. F. Millspaugh, H. W. Harkness, and others, is one of the most valuable contributions to West American botany that has lately appeared. Mr Brandegee reached the region known as Magdalena Bay, Lower California, on January 11, 1889, and traveled northward over the mountain trail to San Quintin bay. As was to be expected he reaped a rich harvest, and we gain a better

knowledge of the flora of this peninsula as the result of his labors. Previously little had been known concerning the flora of the southern portion, and nothing was known relative to the central region, except at a few stations near the coast.

Another valuable contribution to the flora of Lower California, is a 'list of plants collected by Dr. Edward Palmer in Lower California in 1889,' by Dr. Geo Vasey and Jos. N. Rose, in Proc. U. S. Nat'l. Mus, XI, pp. 527-536. Dr. Palmer is known as one of the most thorough botanical collectors, and little escapes his attention.

Missouri Botanical Garden.—The first annual report of the director, Dr. Wm. Trelease, for 1889, is at hand. It contains an outline of the policy of this institution. One of the most practical and directly useful of the steps indicated in this policy, is the provision of scholarships for garden-pupils, and it has been one of the first to receive attention. The management of the garden will be grateful to institutions and investigators for copies of their botanical publications or for additions to the herbarium. 'All feasible assistance will be rendered in the performance of work calculated to advance botanical knowledge,' is the director's closing statement.

ARCHÆOLOGY AND ETHNOLOGY.

Ethno-conchology, a study of primitive money.—In this paper (Rept. Nat'l. Mus. 1886-'87, pp. 297-334,) Dr. Robert E. C. Stearns coins a new term, 'ethno-conchology,' to include the uses made and the purposes to which shells are and have been put by man, other than for food (the latter rather covered by the term mollusk than shell). Dr. Stearns, in this the first of a series which he proposes to contribute to this subject, touches on the ancient history of pearls, the use of the cowry and of wampum for the purposes of money, and closes with a very complete treatment of the shell money of the California aborigines, fully illustrated. The Dentalium or tusk-shell, Tivela crassatelloides, Saxidomus aratus, Olivella biplicata, and the Haliotis or abalone furnished the greater part of their material for the coinage of money, which with them were known by the respective names of Haikwa or Hi-a-qua, Kop-kops, Hawock or Hawok, Kol-kol, and uhl-lo.

Fort Ancient, Ohio.—Warren K. Morehead, (Cincinnati, Robert Clarke & Co.,) had made in this volume a valuable contribution to antiquarian literature. Without doubt Fort Ancient is the most remarkable fortification in the land. That no scrap of history or legend gives its date or the names of its builders does not detract from its interest. It has always been the hope that thorough excavations such as Mr. Morehead has made would reveal something which might definitely fix the date and nationality of its builders. The author says: 'Why it was built and how it was built we can safely say, but who built, and when

no one can answer.' From the character of the pottery found in some of the mounds, identical with that unearthed in the Mandan country of the Upper Missouri, together with the fact that Catlin says the Mandans claimed once to have lived in Ohio, the author suggests that the tribe of Mandans in their strength might have been the builders. Of course the ages of the fortifications are only guess work. Some archæologists have placed them at 4,000 years; others 1,000. Mr. Morehead thinks the latter venerable enough. And from the fact of finding fairly well preserved bones the longer age would be unreasonable. The growth of forest trees upon the embankments certainly fix the date as long ago as three centuries. To-day there are vigorous growing trees of more than 150 years of age growing upon the embankments. But we shall have to find more facts before solving the mysteries surrounding the work of the mound-builder. This book is all the more valuable because it is built up of facts instead of theories. It is the work of a student and an enthusiast in the field. His accurate and careful surveys and his illustrations and maps make the whole subject clearer than ever before; and especially satisfactory to all who have been upon the ground and know something of the typography of the country. Mr. Morehead's measurements make the total length of the walls of Fort Ancient 18,712 feet; length of crescent in the new fort, 269 feet; length of parallel walls, 2.760 feet; total length of terraces within one mile of station, 5¾ miles; grand total of artificial work in length, 10 17-52 miles.

EDITORAL.

The editor again asumes the publication of the WEST AMERICAN SCIENTIST, Messrs. Samuel Carson & Co., of San Francisco, having severed their connection in November, 1889. The delay in the appearance of this issue is due to the editor's late explorations on the Colorado Desert, but we hope to avoid further irregularities in the future. We shall continue, however, to follow the advice of the late Dr. C. C. Parry, and consider our botanical explorations of first importance, and the SCIENTIST secondary.

PUBLICATIONS RECEIVED.

*Only publications not elsewhere noticed are here acknowledged.

Sanitary Entombment; the Ideal Disposition of the dead. By Rev. C. R. Treat. The Sanitarian, Dec. 1889. Reprinted. From the author.

Bulletin de la Societe Zoologique de France. Vol. XIV, Nos. 1, 2, 3, 4. 5, 6, 7 and 9 (1889).

Proceedings of the U. S. National Museum, Vol. XI (1888).

Bulletins of the U. S. National Museum, Nos. 33–37, inclusive.

Modern Science and Modern Thought. With a supplemental chapter on Gladstone's 'Dawn of Creation' and 'Proem to Genesis,' and on Drummond's 'Natural Law in the Spiritual World.' By S. Laing. Illustrated. The Humboldt Publishing Co. 28 Lafayette Place, New York.

The principal results of Modern Science, and the revolutions they have effected in Modern Thought, are concisely presented. Here are displayed the results of recent inquiries into the composition and constitution of the earth and of the universe, into the nature and laws of matter, the development of organized and animated existances, the history of man, the myths of all races and the religions of all peoples; discussions of the nature of force, motion, electricity, light and heat. The display is brilliant and instructive.

Utilitarianism. By John Stuart Mill. Humboldt Library, No. 121. Price 15 cents. The Humboldt Publishing Co., 28 Lafayette Place, New York.

The Electric Light and The Storing of Electrical Energy. By Gerald Molloy, D. D., D. Sc. Numerous illustrations. Price, 15 cents. The Humboldt Publishing Co., 28 Lafayette Place, New York.

The Modern Theory of Heat and The Sun as a Storehouse of Energy. By Gerald Molloy, D. D., D. Sc. Price 15 cents. The Humboldt Publishing Co., 28 Lafayette Place, New York.

Upon the Origin of Alpine and Italian Lakes; and upon Glacial Erosion A series of papers by Sir A. C. Ramsay. F. R. S., President of the Geological Society. John Ball, M. R. I. A., F. L. S., etc. Sir Roderick Murchison, F. R. S., D. C. L., President of the Royal Geographical Society. Prof. B. Studer, of Berne. Prof. A. Favre, of Geneva. Edward Whymper. With and introduction and notes upon the origion and history of the Great Lakes of North America, by Prof. J. W. Spencer, State Geologist of Georgia. The Humboldt Publishing Co.

No one desirous of being well informed can afford to neglect this important study of Geology.

Gems and Precious Stones of North America. By George Frederick Kunz. From the publishers. This mangificent work will be reviewed late. (See advertisement.)

The Great Conspiracy against Our American Public Schools. By Rev. R. Harcourt, D. D., with illustrations by Thomas Nast.

Contributions to the History of Pallas' Cormorant. By Leonhard Stejneger.

New North American. A cridida found north of the Mexican boundary. By Lawrence Brauer.

Descriptive notes of new genera and species from the Lower Cambrian or Olenellus Zone of North America. By Charles D. Walcott.

A review of the genus Sclerurus of Swainson. By Robert Ridgway.

Descriptions of New Ichneumonidæ in the collection of the U. S. National Museum. By William H. Ashmead.

Description of two new species of snakes from California. By Leonhard Stejneger.

Birds Collected on the Galapagos Islands in 1888. By Robert Ridgway.

Preliminary reports on the collection of mollusca and brachiopoda obtained in 1887–88 by the steamer Albatross. By W. H. Dall.

Description of the yellow finned trout of Twin Lakes, Colorado. By D. S. Jordan and B. W. Evermann.

Notes on a third collection of birds made in Kauai, H. I., by Valdemar Knudsen. By Leonhard Stejneger.

Notes on the occurrence of Gillichthys y-canda at San Diego, California. By Charles A. Gilbert.

Contributions toward a monagraph of the Noctuidæ of temperate North America. By John B. Smith.

The twelve preceding pamphlets are from the Proceedings U. S. National Museum, Vol. XII. Received from the Smithsonian Institution.

New California Homoptera. By E. P. Vanduzee. (Entomologica Americana, Vol. VI.) Reprinted. From D. W. Coquillett.

EXCHANGES.

*Brief Notices free to Subscribers.

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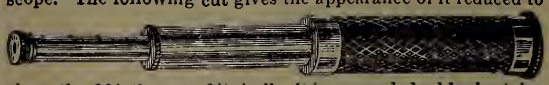

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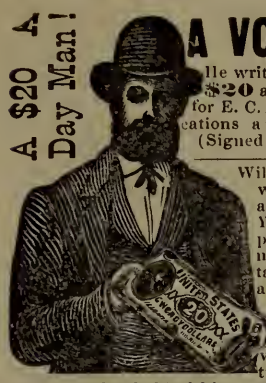

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DR. GEORGE WILLIAM BARNES.

Dr. Barnes was born in Frederick county, Virginia, December 9, 1825. In 1835 his family removed to Newark, Ohio. In 1851 he graduated from the Cleveland Homeopathic College, and located at Mt. Vernon, Ohio, where he practiced his profession for fourteen years. In 1865 he was elected to a professorship in the Cleveland Homeopathic College, and removed to that city. In 1869 failing health compelled him to resign and seek a milder climate. After a year spent in traveling in California, studying the climatology of different sections, he located permanently at San Diego. He soon took high rank among the members of his profession in this State. In 1873 he received a spinal injury from which he did not recover. In the same year the San Diego Society of Natural History was organized by him and four others, and he was elected its president. He held this office until two years ago when ill health led him to resign. Only the members of this society can ever know how much its success has depended upon his incessant labors and his judicious management. He was always ready to give generously of his time and money for its benefit. He read many papers before the society, some of them being of considerable value. One upon 'The Hillocks and Mound Formations of the Pacific Coast,' attracted much attention from scientists throughout the country.

Dr. Barnes was held in high honor in his profession throughout this State and the Union. He held many important positions. He was a member of the American Institute of Homeopathy from 1853 to the time of his death, and since 1878 he belonged to the Seniors of that body. He aided in establishing the first Homeopathic Medical Dispensary in Cleveland, Ohio, and the Homeopathic Hospital of that city. He assisted in establishing the *Ohio Medical and Surgical Reporter*, and was its editor for a time. Since his removal to California he has been professor emeritus in the Cleveland Homeopathic College.

Dr. Barnes' high sense of honor, his purity of life, his nobleness of character, and true manliness won the respect of all, and the love of many. *D. Cleveland.*

CONTRIBUTIONS TOWARD A LIST OF THE FAUNA AND FLORA OF WET MOUNTAIN VALLEY, COLORADO.—V.

GEOLOGY.

Although not strictly within the scope of the Colorado Biological Association, nor indicated by the title of these papers, we propose to include in the series some geological papers, believing that these are all exceedingly helpful towards a good understand-

ing of the fauna and flora not only of the past, but for the present also.—(T. D. A. C.)

VII. FIRST CONTRIBUTIONS TOWARDS A LIST OF THE MINERALS OF WET MOUNTAIN VALLEY.

(Read before the Colorado Biological Association.)

1. Sphalerite—Zinc Blende. Bassick mine; Bull Domingo mine.
2. Cerussite—Carbonate of Lead. Ilse mine; Silver Lance, in small quantity.
3. Galena—Sulphide of Lead. Bull Domingo; Jay Gould mine.
4. Anglesite—Sulphate of Lead. Thomas and Lawrence mine.
5. Tetrahedrite—Gray Copper. Humboldt mine; Pocahontas mine, Zoo mine; Silver King mine; Micawber mine.
6. Bornite. Gem mine.
7. Azurite—Blue Carbonate of Copper. Zoo mine; Markheart's mine; Greenhorn Range.
8. Malachite—Green Carbonate of Copper. Zoo mine; Markheart's mine.
9. Cuprite—Oxide of Copper. Markheart's mine.
10. Chalcopyrite—Copper Pyrites. Bayard Taylor mine; Sangre de Cristo Range.
11. Cuprum—Native Copper. Sangre de Cristo Range, many places.
12. Chalcocite—Copper Glance. Sangre de Cristo Range.
13. Cerargyrite—Horn Silver. On the porphyry belt.
14. Bromyrite—Bromide of Silver. On the porphyry belt.
15. Iodyrite—Iodide of Silver. On the porphyry belt.
16. Argentum—Native Silver. Bull Domingo mine; Gem mine.
17. Stephanite—Sulphide of Silver. Humboldt mine; Pocahontas mine.
18. Molybdenite—Sulphide of Molybdenum. Hailstorm mine, Grape Creek.
19. Pyrargyrith—Ruby Silver. Humboldt mine.
20. Sylvanite—Telluride of Silver. Powhattan mine, Rosita.
21. Baryta—Sulphate of Barium. Pocahontas mine; Silver Bar.
22. Calcite—Carbonate of Lime. Sangre de Cristo Range.
23. Niccolite—Arsenate of Nickel. Gem mine.
24. Asbolite—Earthy Cobalt. Gem mine.
25. Psilomelane—Black Oxide of Manganese. Almost everywhere, especially on porphyry belt.
26. Magnetite—Oxide of Iron. Near Gem mine; Grape Creek.
27. Pyrite—Iron Pyrites. Gray Eagle Mountain Vein; Immortal mine; Iron Mountain.

28. Limonite—Brown Hematite. Near Grey Eagle.
29. Hematite—Specular Iron Ore. Near Gem mine.
30. Menaccanite—Titanic Iron. Sangre de Cristo Range; Pine Gulch.
31. Arsenopyrite—Mispickel. Song Bird mine.
32. Wulfenite—Molybdenate of Lead. Review mine.
33. Graphite. Blackburn.
34. Asbestus. Sangre de Cristo Range.
35. Stibnite—Sulphide of Antimony. Immortal mine.
36. Aurum—Native Gold. Bassick mine.

T. Charlton.

BUTTERFLIES OF SAN DIEGO.

It was my good fortune to spend two months of the early part of 1889 in Southern California. Arriving in San Diego on the 22d of January I proceeded to acquaint myself with the lepidoptera of the vicinity. The season seemed to correspond nearly with the months of April and May in the Northern States (east of the Great Divide), and though there were two or three light frosts after my arrival, the spring flowers soon spangled the mesas and canyons with a profusion I never saw elsewhere. For a few days the majority of the butterflies I found were remnants of last year's crop, worn and faded, and of species found in my Dakota home. Pyrameis Cardui (known by the boys under the name of Chinamen) were common on the mesas and even in the streets of San Diego; Pyrgus Syrichtus was not uncommon on mesas; and Danais Archippus still lingered among the Eucalyptus trees of Maribou Park. Pyrameis Carye, then quite common, was new to me.

But the spring butterflies soon came fluttering into notice, and among the first and most abundant were the Meliteas. They soon crowded the mesas east of San Diego in wonderful abundance. Though they are rare in Dakota, the speckled beauties rose in great numbers before me on the uplands of San Diego. There were Melitea Palla, Gabbii, Whitneyii, Quino, Anicia, Editha and Chalcedona, and their numbers seemed to increase until I left San Diego, on February 23d.

The beautiful Anthocharis Reakertii was soon common in the valleys and canyons east of San Diego, and my captures there have proved valuable exchanges.

Thecla Melinus, T. Augustus and T. Dumetorum (Affinis) were also common. The bright green of the under side of the wings of the latter species made it a conspicuous object, as it flitted in the sunshine. The Theclina were distinctly home-keepers, never going far from some bush or point which each seemed to have selected as his abiding-place.

I spent many pleasant hours (in spite of the cactus) in the canyon, east and south of Old-town. It was here that I cap-

tured the diminutive Charis Australis and Lycaena Exilis, which are also found in Texas.

At various points, Lycaena Amyritula, Acmon, and some undetermined species were found, but the rocky sides of Point Loma furnished my greatest prize—Lycaena Sonarensis (L. Regia). The light azure wings of this species, spotted with black, orange and crimson, are very beautiful.

With the advancing season came Colias Eurytheme, Junonia Cœnia, both of which are common east. Cœnonympha Brenda, Pyrgus Ericetorum, Pholisora Catullus and one or two species of Nisoniades; but these, with the exception of C. Brenda, were comparatively rare.

Toward the latter part of February, Meganostoma Eurydice and Papilio Zolicaan began to appear on the sides of the canyons; and, as they were long, strong fliers, many a hard chase did they give me. When I left San Diego, species not previously found by me were coming out; but time pressed, and at San Bernardino the lepidopteral fauna was largely different from that found at San Diego. San Diego proved a splendid winter collecting-ground, and a pleasant place to live; and I hope to revisit it. *P. C. Truman.*

AMOREUXIA.

The following stray manuscript note was recently discovered by the editor between the pages of a book on botany, obtained at second hands:

Amoreuxia Schiedeana, Planch., Hemaguis of the Papagos, Sarza of the Pimos, furnishes to these Indians an edible root or tuber. They eat it roasted or baked in hot ashes. It is quite palatable with a slight bitterish bytaste.

A. Schott.

GEOLOGY, MINERALOGY AND PALAEONTOLOGY.

Gems and Precious Stones of North America.—George Frederick Kunz, the well-known gem expert, is the author of this, one of the most artistic, interesting, and useful of books ever issued in this country. It is from the press of the Scientific Publishing Co., 27 Park Place, N. Y., and consists of 336 pages, large octavo, illustrated with eight colored plates and numerous engravings. Price, $10.00. (See advertisement.)

The work embodies a popular description of the occurrence, value and history of American gems, with mention of the collections in which they exist; also a chapter on pearls and on remarkable foreign gems owned in the United States.

The author, as expert for Tiffany & Co., and as special agent

of the division of mineral statistics of the United States Geological Survey, has had unusual facilities which he has improved in bringing together this vast amount of data which renders his monograph of interest to the collector, the archæologist, the ethnologist, the mineralogist and the geologist, and of equal interest and of practical value to the miner, the prospector, the jeweler, the dealer—in fact to every one who is likely to be deceived by imitations and misnamed specimens. It not only covers with a degree of thoroughness never before equalled, the whole field of American gems, but also gives a general view of the condition of the gem interests of the whole world.

The superb colored plates are by Prang & Co., and are triumphs of artistic skill, illustrating especially fine and typical American gems in a most beautiful manner.

Nearly every known gem has been found in the United States, but as yet regular mining for them is conducted in only two States—Maine and South Carolina. The annual output is less than $200 000 worth in the rough state, but with the exact knowledge presented in this work, which should be available to every one within reach of a public library or an educational institution, the production should be sensibly increased.

A true idea of the value, common mode of occurrence, methods of determination, and ways of prospecting for and mining precious stones will prevent many mistakes, render such fraudulent operations as the 'Arizona diamond swindle' less easy, and facilitate legitimate gem mining.

California has yielded numerous diamonds, but none, as yet, of great commercial value. Southern California is said by many to closely resemble South Africa, whose diamond fields, within a distance of a mile and a half, have yielded *over nine tons of diamonds.* If—

ANOTHER RATTLESNAKE CURE.

'These Indian women first showed us that the cactus, cut open and bound on a rattlesnake bite, will cure the wound.'—*Home and School Visitor*, X., 120.

The original source of the above item is unknown, as it appears in a selected article with the title of 'The Cactus Bouquet.' As the paragraph is embodied in the article as a quotation from yet another article we only venture to give it for what it is worth. Perhaps it may call forth observations from some of our readers.

SAN FRANCISCO MICROSCOPICAL SOCIETY.

The meeting of this society, held June 4th, was a special one to celebrate the twentieth anniversary of its organization. It resulted in bringing together a large number of gentlemen who are now or have been members, and the time was given to re-

viewing its past history and the work accomplished. The San Francisco Microscopical Society is the oldest organization of the kind in the United States, and is only antedated by one existing society in the world.

The greater portion of the evening was taken up with the reading of an historical address, by Henry G. Hanks, the first Corresponding Secretary and second President of the society. This society originated in the Academy of Sciences. Hiram G. Bloomer and Henry G. Hanks, both active members of that society, realizing the importance of the use of the microscope in their special studies, botany and geology, proposed forming a microscopical section of the academy. The plan not according with the views of other members, it was decided to form a new and independent society. A number of meetings were held at 649 Clay street, and on the evening of June 4, 1870, the San Francisco Microscopical Society was organized, a constitution and by-laws framed and adopted, and officers elected.

The officers for the first year were: J. B. Trask, M. D., President; Gregory Yale, Vice-President; Henry C. Hyde, Recording Secretary; Henry G. Hanks, Corresponding Secretary, and Emile Neustadt, Treasurer. Of the above officers Henry C. Hyde and Henry G. Hanks are still members.

The proceedings of the original society have not been preserved; but from a lack of funds and other causes no considerable advance was made Having no adequate apparatus, interest began to wane. and before the expiration of a year the society had practically ceased to exist. There were those, however, who had not lost interest, and the reorganization was accomplished April 5, 1872. The society was incorporated under the laws of the State of California, August 30, 1872.

Good work was accomplished during 1872, and the society was full of enthusiasm. The large microscope and accessories were purchased at a cost of $1,500. The first mineralogical paper was read by Guido Kustel (on a peculiar form of silver mineral), and the society having gained some notoriety, received its first visit from a representative of the press at its meeting on November 1st.

At the meeting held September 18, 1873, a donation of seaweeds with diatoms attached was received, and this was the first time diatoms were mentioned in any of the meetings. This is an event worthy of mention, because the members of the society afterwards took an active interest in the study of diatoms, and the cabinet is very rich in diatom preparations. Three years later—August 3, 1876—the famous Santa Monica deposit of diatomaceous earth was first brought to the notice of the society, and so rich in new species did this small find prove, that specialists and learned societies from all parts of the world eagerly sought a small quantity for study.

The reading of this paper by Mr. Hanks demonstrated that the life of the society had been an active one. There have been

read at its meetings, by eminent specialists, papers of great value on all subjects pertaining to microscopy. Its work has been recognized and appreciated by kindred societies in America and abroad, especially by the Royal Microscopical Society of London. It is the intention of the society to publish its history and proceedings at an early day, including some of the valuable papers read at its meetings.

MEETING OF JUNE 25TH.

At this meeting William Payzant exhibited a find of fresh-water polyzoa from Lake Temescal, Berkeley, which proved very interesting and attractive to the members present. The colony shown was of the genus Plumatella, but the specific name has not yet been determined by Mr. Payzant. Indeed he is in doubt whether it has before been observed and named. So far as recorded, this is the first find of Plumatella ever noted in this vicinity. Nothing could have been more beautiful than the hundreds of fully expanded tentacles, gently waving in the drop of water on the stage of the microscope, and Mr. Payzant received the congratulations and thanks of all present.

The genus Plumatella consists thus far of twelve named species, of which nine are British. The name is a diminutive noun, from *pluma*, a feather, and indicates at once the distinguishing characteristic of the genus. The cœncœcium is composed of a series of membrano-corneous tubular cells, each of which constitutes a short ramulus with a terminal orifice, with branches distinct from each other, and from these orifices the tentacula protrude and gently wave in the water in search of food.

EDITORIAL.

THE SCIENTIST has lost another friend in Dr. G. W. Barnes, whose protrait is given this month. His article advocating cremation, which appeared in our preceding volume, was widely read, and created much interest in the subject of the sanitary disposition of the dead. Consistent to the last, he provided in his will for the incineration of his body, which was performed at Los Angeles. His valuable, though not voluminous, writings mainly treat on medical subjects. He bequeathed the San Diego Society of Natural History a valuable lot of scientific books, including a set of the reports of the Mexican boundary and Pacific Railway surveys.

P. C. Truman, of Volga, South Dakota, contributes an interesting article on the butterflies of San Diego to this issue. He desires to enlist young naturalists in the collecting of his favorite insects, and we advise those who are interested in this study to correspond with him.

NOTES AND NEWS.

H. C. Thayer, late of Los Angeles, died January 6, 1890.

The American Association for the Advancement of Science will meet at Indianapolis, Indiana, beginning August 19. A large attendance is desired.

It is announced that the late publishers of THE WEST AMERICAN SCIENTIST, Messrs. Samuel Carson & Co., have recently failed.

Of the making of 'species' there is no end.

California produced in 1889, thirteen million dollars in gold—about two-fifths of the entire gold product of the United States.

Our valued contributor, Theo. D. A. Cockerell has returned to England.

In the May *Nautilus*, Mr. Henry Hemphill, of San Diego, describes an American species of Anadenus, from the Cuyamaca mountains, east of San Diego.

When the Coronado Beach Co. were boring an artesian well on Coronado Beach, San Diego, in 1886, a fossil tooth was found at a depth of 110 feet which was presented by H. L. Story to Mrs. R. S. Eigenmann. This has been examined by Prof. E. D. Cope, editor of the *American Naturalist*, who identifies it as a left upper molar of an extinct species of horse, Equus excelsus.

Dr. W. R. McNab, Professor of Botany at the Royal College of Science, Dublin, and director of the Botanic Garden at Glasnevin, died December 3d, 1889. Dr. McNab was distinguished by his investigations in physiological botany and the minute anatomy of plants both recent and fossil.

The University of Pennsylvania has elected Professor Edward D. Cope to the chair of Biology and Paleontology and Dr. George H. Horn to the chair of Entomology.

The *American Geologist* for January, 1890, contained notes on the geology and scenery of the islands forming the southerly line of the Santa Barbara Channel, by Lorenzo G. Yates.

Dr. Daniel Kirkwood, the eminent astronomer, formerly Professor of Mathematics of the Indiana University, has taken up his residence in Riverside, California. Dr. Kirkwood is probably best known for his explanation of the rings of Saturn and the distribution of the minor planets or asteroids between Mars and Jupiter.

The Wright & Newton electric microscope, for the projection of microscopic sections of rocks, minerals, plants and animals, was exhibited at a meeting of the Western Society of Naturalists. A section of the fibro-vascular bundle of the pumpkin was shown under a magnification of about 10,000 diameters, the large pitted vessels appearing about three feet in diameter; Nuclei of the root tip of the bean were shown three inches in diameter.

Mr. Duthie, botanical director for northern India, advocates the use of flowers of the Calligonum for food in northwestern India.

In a recent report on magnetic rock among the hills of Upper Burmah, Dr. Noetling describes a mountain or hill at Singaung, which consists of a huge mass of iron ore.

More than 1000 peaks in the Himalayas have been found by measurement to exceed 20,000 feet in height, and it is estimated that at least 2000 reach this altitude. In the Alps there are two peaks more than 15,000 feet high, and six or seven over 14,000 feet.

Pita, the new remedy for hydrophobia recently discovered in Spain, seems to be a name given to the flower stalk of the aloe, a plant common in some parts of Spain. The story goes that its virtues were discovered accidentally by a man in a fit of hydrophobia falling upon an aloe plant and unconsciously biting the stem.

PUBLICATIONS RECEIVED.

*Only publications not elsewhere noticed are here acknowledged.

U. S. Coast and Geodetic Survey. Reports for 1878 to 1887 inclusive, also four magnetic charts for 1890; and Bulletins Nos. 1 to 17 inclusive.

U. S. Mint, seventeenth annual report of the director, 1889; and report upon the production of the precious metals in the United States in 1889.

U. S. Lighthouse Board. Aberrations of audibility of fog signals, by Arnold B. Johnson. Sound Signals by same author. History of the application of the electric light to lighting the coast of France, by Major D. P. Heap. List of light-houses, lighted beacons, and floating lights on the Atlantic, Gulf and Pacific Coasts of the U. S., corrected to Jan. 1, 1890.

Reports from the consuls of the U. S. Nos. 105, 110-11, 112, 113, 114; and special on cookery for workingmen's wives, and oatmeal food.

Transactions of the Department of Agriculture of Illinois. New series, vol. 18, (for 1888). From S. A. Forbes, State Entomologist.

On Dynamic Influences in Evolution. By Wm. H. Dall. Read before the Biological Society of Washington, March 8, 1890. From the author.

The Oologist's Exchange, Vol. II, 1889-90. (Complete in 11 Nos.) From A. E. Pettit.

Seeger & Guernsey's Cyclopedia of the manufactures and products of the United States. Comprises every article made in

this country, indexed and classified, and under each article the names and addresses of manufacturers. (See advertisement.)

A new philosophy, a radical's idea of health, happiness and longevity. By L. P. McCarty, 1890. A lucid, common-sense treatise, telling how to maintain health without medicine, how to secure happiness without money, and how to attain to a long life. It cannot fail to do any one good to read this little book, which can be had in paper covers for 50 cents; flexible covers, 75 cents, of Carson & Co., 208 Post st., S. F., Cal., or at this office.

Artificial keys to the genera and species of mosses recognized in Lesquereux and James' Manual of the Mosses of North America. Trans. Wisc. Acad Sci.; Arts and Letters, vol. VIII. From the author, Charles R. Barnes, Prof. of botany, University of Wisconsin, Madison. Price, fifty cents.

Black Beauty: his grooms and companions. The "Uncle Tom's Cabin" of the Horse. By Miss Anna Sewell, George T. Angell, 19 Milk St., Boston, Mass. It is a delight to read this pleasant sketch, purporting to represent the experiences and feelings of a high-bred horse. This autobiography of an English horse is of deep interest and is proving full of fascination to old and young, high and low. Over 100,000 copies have already been sold in London, and it is expected to have a million circulation in America—as it well deserves. No one will regret sending twenty-five cents for a copy of this book, which contains 260 pages.

On the Hymenoptera of Colorado. By Wm. H. Ashmead, Colo. Biol. Assn., Bull. No. 1, 1890.

EXCHANGES.

*Brief Notices free to Subscribers.

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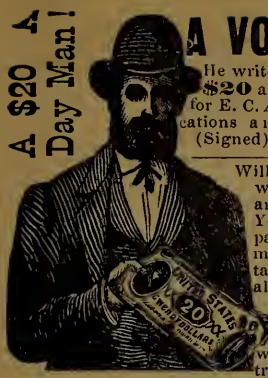

A VOICE from Ohio. Here is a portrait of Mr. Garrison, of Salem, Ohio. He writes: "Was at work on a farm for **$20** a month; I now have an agency for E. C. Allen & Co's albums and publications and often make **$20** a day." (Signed) W. H. GARRISON.

William Kline, Harrisburg, Pa., writes: "I have never known anything to sell like your album. Yesterday I took orders enough to pay me over **$25**." W. J. Elmore, Bangor, Me., writes: "I take an order for your album at almost every house I visit. My profit is often as much as **$20** for a single day's work." Others are doing quite as well; we have not space to give extracts from their letters. Every one who takes hold of this grand business piles up grand profits.

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